Efficient in vitro regeneration of biodiesel Plant jatropha curcas .L

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Abstract

In the present investigation, in vitro propagation of Jatropha curcas L. was achieved employing nodal explants. Axillary shoot bud proliferation was best initiated on Murashige and Skoog's (MS) medium supplemented with 20 ?M N6-benzyl- adenine (BA) and 50 ? M adenine sulphate, in which cultures produced 8.2 ± 0.56 shoots per nodal explant with 3.0 cm length after 3-5 weeks. The rate of shoot multiplication was significantly enhanced after transfer to MS medium supplemented with 2.5 ? M 6-furfuryl amino purine (Kn), 0.5 ? M indole- 3-butyric acid (IBA) and 25 ? M adenine sulphate for 4 weeks. Internode explant segments of Jatropha curcas plants responded in vitro and formed callus tissue when cultured on Murashige-Skoog (MS) full strength nutrient medium supplemented with 2,4-Dichlorophenoxyacetic acid (2,4-D – 4 mg/L) and N6-Benzyl adenine (BA- 4 mg/L). The internode-derived callus tissues were found non-embryogenic and hence did not regenerate into shoot and root, respectively. The internode segments when cultured on MS (full strength) media supplemented with BA – 5 mg/L) were found to grow forming two to three buds. However, these shooting explants did not form roots upon hormonal regulation. On the contrary, endosperm tissue cultured on full strength MS media supplemented with 3 mg/L BA and 1 mg/L Indole-3-butyric acid (IBA) along with activated charcoal (100 mg/L) and ascorbic acid (50 mg/L) yielded simultaneous shooting and rooting response after four weeks of incubation.

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